The Antique Radio Gazette

OFFICIAL PUBLICATION OF THE ANTIQUE RADIO CLUB OF AMERICA

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JUBILEE SOUVENIR NUMBER
MARCH 1938
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OFFICERS OF ARCA:

President: Lloyd McIntyre
4204 Thorn Apple Lane
Charleston
W. Virginia 25313

Executive Vice President
Rodney Phillips
P.O. Box 684
Bryn Mawr
Pennsylvania 19010

Vice President:
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498 Cross Street
Carlisle
Massachusetts 01741

Secretary/Treasurer:
Jane and Bill Denk
81 Steeplechase Road
Devon
Pennsylvania 19333

Recording Secretary
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11301 Woodland way
Myersville
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Send COPY for ADS to:
Mel Comer
205 Roberts Road
Ardmore, Pennsylvania 19003

APPLICATIONS for membership and payment of Dues to:
Jane & William Denk
Secretary/Treasurer
81 Steeplechase Road
Devon, Pennsylvania 19333

Editor:
John E. Drake
P.O. Box 942
23 East Wharf Road
Madison, Connecticut 06443

Television Editor
Kenneth L. McIntosh
907 Radcliffe Road
Baltimore, Maryland 21204

It is our intention to have the Gazette published as closely as possible to the following dates:

March 31 — June 30
September 30 — December 30

The closing dates for receiving material of all kinds in order to have it appear in the next issue would be:

February 15 — May 15
August 15 — November 15

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Yearly dues of $12.00 U.S. currency are payable to ARCA January 1, of each year for members in the USA, Canada, and Mexico. Overseas dues are $14, which includes airmail postage.

The Antique Radio club of America was incorporated in the State of Kentucky, in September, 1972. The first meeting was held at the Marriott Motor Inn, Washington D.C., on September 23, 1972. At this meeting, by-laws were read and approved and directors selected. We feel that the inception of this Club is a giant step in bringing together those individuals whose chief interest lies in the area of early radio. We invite all collectors and historians of the subject to join the club. A note to William E. Denk, Secretary, 81 Steeplechase Road, Devon, Pennsylvania 19333, will bring you an application blank by return mail.

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President's Page

It looks like Spring will be a welcome sight to all this year! The time has come to dig out the suitcases, cameras and all of those collectible, tradeable items and prepare for the radio circuit.

A few nights ago, I was reviewing the booklist the W.Va. Chapter published only four years back. It listed about ten books, related to radio. Today the booklist has nearly forty and keeps growing. The success of the many new clubs that have sprung up and the growth of our older clubs tells me that we are having an impact on the preservation of this most rewarding effort, the wonderful world of "radio".

To all of you who attend the different meets around the country, I need not amplify the excitement generated when friends meet friends and new relationships are established. For the sake of those who do not attend, for one reason or another, you have missed perhaps the best part of radio collecting. The Traders' Market; seminars, by experts in the field; auctions; the grand banquet; and as is with ARCA, the exclusive privilege of being able to attend your host convention in a different and exciting part of the country each year! No other club has the mobility to provide such a service with its premier conference each year.

The quarterly Gazette tell the story, but only you can live the story by attending and reaping the benefits of these grand endeavors.

ARCA is proud to have been the leader in the establishment of many concepts incorporated at many club meets, now hosted by other clubs around the country. ARCA, in its effort to maintain this leadership role, will introduce several new programs and add new ideas to old programs this year.

1988 is a historical occasion. 100 years of radio development adds additional responsibility to clubs hosting conferences this year. Without the understanding of the "roots" of radio, can we fully appreciate and live the excitement that the radio era produced?

Come and relive those years with us in Charleston, WV, a city full of magic and excitement! We hope your trip will long be remembered.

Lloyd McIntyre

NEWS FROM CHARLESTON

February 1988

As you all are probably aware, everyone here is busy making preparations for the National Meet being held here in June. Every effort is being made to make this a memorable occasion for all who attend. Almost all of our local members, as well as many members across the county, are contributing to make this year's meet an action packed one. There just doesn't seem to be enough time to get everything done without overlapping some activities. There should be more than enough to choose from. Many of them are detailed elsewhere in this issue, so be sure to read that article.

I want to thank all those who have responded to the request for book donations for the J.A. Moore Memorial Library. Several have written saying they would be glad to send the books if we would pay the mailing costs. So let me request that if you have books and/or magazines you would like to donate, send a list of the titles, the authors, and the year and month of publication. That would help us tremendously in determining if the publications could be useful in the library. Every letter will receive a reply. If the books or magazines can be used, arrangements can be made to ship them to the following address:

J. Albert Moore Memorial Library
c/o W. Blaine Smith
721 Lower Donnally Rd.
Charleston, WV 25304

The items can be shipped to me collect or a check reimbursing the shipping costs will be sent to the donator.

I don't want to close without trying to convey the excitement and anticipation felt by the local chapter for hosting the National Meet this year. It is really an honor to be able to do this again and we sincerely hope everyone of you will be able to spend at least a part of that week with us. See ya then!

W. Blaine Smith
Reporter

1887 - 1888

Heinrich Hertz, German. It will be noted that the dedication of this issue of Radio Craft *to old-time radio begins with this date since, in reality, Hertz' experiments paved the way for Marconi's work in this field. Some prefer to call Hertz the "Father of Radio"; and that he deserves more than ordinary recognition, for his work in this field is indicated by the fact that radio waves are commonly referred to as "Hertzian waves". Hertz first became intrigued with this problem when he studied Maxwell's theories concerning light, magnetism and electrical waves. In an attempt to gain further data on this theory, Hertz actually set up the first spark transmitter and receiver. The transmitter consisted of a Leyden jar and a coil of wire, the ends of which were left open so that a small gap was formed. For the receiver he employed a similar coil, with gap arrangement located in the opposite end of the room. When the Leyden jar was charged sufficiently, it discharged through the gap in the wire coil; and the oscillating waves thus generated where launched into the ether of the room, and swept across the receiving coil causing sparks to fly across the gap in the receiving coil. Hertz measured the velocity of these waves and found that they were the same as that of light, 186,000 miles per second; also measured their length and, subsequently, substantiated Maxwell's theories.*

ARCA 1988 NATIONAL MEET ACTIVITIES

Following is a brief summary of the proposed seminars, demonstrations, tours, and other activities planned for this year's National Meet in Charleston. The time slots allocated for these events will be found in the registration material inserted into this issue.

SEMINARS & DEMONSTRATIONS

1) A Century of Radio:

This ARCA meet is dedicated to Heinrich Hertz who through his experiments concluded in 1888 that radio waves, or "Hertzian waves", could be transmitted and received, thus proving Maxwell's theory on electrical waves. Chapter member Jim Duffield will attempt to recreate this great moment in history. Heinrich Hertz, born February 2, 1857, in Hamburg, Germany, deserves the recognition accorded him by Hugo Gernsback in his famed Jubilee Edition of Radio-Craft Magazine of March 1938. We hope you will enjoy this 100 year trip back to that time.

"In conjunction with this special presentation, we will try to recreate this great moment of history with pictures, books, and demonstrations. This great moment in history." *Jim Duffield, Chairman*

2.) The Pittsburgh Antique Radio Society:

Richard Brewster, President, presents the Dr. Conrad Story and the moving and restoration of Conrad's garage. "KDKA: IT ALL BEGAN HERE". Complete with film and slide presentation. See page 557 - Radio-Craft, March 1938.

3.) William Hoy:

Local resident explains how he aquired several patents in the field of radio and talks about his other innovations in the electrical industry. Also included is Dr. Mahlon Loomis and the experiments he conducted in the high mountains of West Virginia. See page 555 - Radio-Craft, March 1938.

4.) Meet The ARCA - ARC Press Editors & Authors

Hosted by John Terrey and Blaine Smith, this event will give the membership a chance to meet some of the writers, authors, contributors, and editors of Antique Radio Classified and the Antique Radio Club of America Gazette. What kind of articles wold you like to see in these publications? How does one go about submitting an article for publication? Feel free to ask any question or make any suggestion you like.

5.) Mel's Corner

Hosted by Mel Comer, a panel of veteran radio collectors takes us through a trip of the 'Golden Years' of radio.

6.) Preservation or Restoration Where One Stops and the Other Begins:

Ed Lyon of the Mid-Atlantic chapter and Geoffrey Bourne of the W. Va. chapter give some insight into the fine art of making those old sets look like new while keeping the alteration of the original appearance to a minimum.

7.) Catalin Radio Manufacturing:

Ed Lyon's presentation (on the manufacturer of some of the most sought after radios) includes blueprints, formulas, manufacturing processes and even several arbors used to make the radio molds. He will demonstrate the manufacturing process, including some radio cabinets in various states of manufacture, and also will display some fo the Catalin Radios.

PROPOSED TOURS

1). The Kentucky Highland Museum, Ashland, KY:

Magnificent mansion housing a museum. Included here is a display "Radio In Review" presented by the W. Va. Chapter. A stop will also be made at the Blenko Glass Factory.

2). W. VA Chapter Headquarters:

Located 10 minutes from the Ramada Inn, it's not the grandest of places, but it offers a temporary meeting and storage facility as well as the location of the J. Albert Moore Memorial Library. We think it will bend your mind a little.

3). American Electric Power's Central Machine Shop:

Member Harold Rulen, the superintendent, along with J. A. Moore, established what is now one of the largest and most modern machine repair facilities in the U.S.A. Less than 5 minutes from the Ramada Inn, we'll tour the shop where the world's largest 16-inch guns were made for our great battleships and are still in use today. The cranes that moved these mighty guns now move the largest electric turbines currently in use in the world.

4). Tours of Geoffrey Bourne's and President Lloyd McIntyre's Homes will be included.

The 1907 3-story victorian home of Geoff and Grace is currently under restoration, and houses many antiques. The English Tudor home of Lloyd and Patsy has many collectibles and will offer a break to all in the routine conference schedules.

5). The West Virginia State Capitol Complex:

The State Capitol Building, Governor's Mansion and the Science and Culture Center offer some of the most magnificent architecture to be found in one complex. There also is a museum within, plus many more attractions on the grounds.

6). Charleston Town Center:

The largest downtown shopping mall in the east offers a variety of shops. The mall is connected by a beautiful walkway to the heart of downtown Charleston, restored to its turn-of-the century architecture.

OTHER ACTIVITIES

Traders' Market: A large tent will be errected in the concourse area. Limited exhibit space will be made available on a first-come-first-serve basis to those who want to be out of the sun, or (perish the thought) out in the rain. Cost will be $15.00 per exhibit area. The Chinese aution will be conducted here, as well as the W. VA. Chapter Bookstore display.

For those of you who are not familiar with a Chinese Auction, this is how it works: A display area with a table and blackboard are provided. Individuals who wish to auction items list those items in a column provided on the blackboard and display the items on the table. Anyone wishing to bid simply writes his bid number and the dollar amount in the column provided. The next person may up that bid, and so on, until the time has expired. The highest silent bidder wins and a new item (or up to 10 items) is displayed.

The last event we want to mention is the Bicentennial Celebration of the county of Kanawha, in which Charleston is located. This celebration is taking place throughout 1988. One of the featured attractions of the celebration is a replica of a flatboat much like the ones that used to go up and down the Kanawha River to ship supplies and carry our first manufactured product, salt, to the market places in the 1700's and 1800's. This flatboat, however, will house a small museum of memorabilia and artifacts of the Kanawha County.

W. Blaine Smith
Reporter

OLD EQUIPMENT CONTEST
Catagories

1. Crystal or Coherer Receivers 1906-07
    a. Factory made
    b. Homemade or Kit
2. Regenerative Receivers
3. Receivers with RF Amplifiers
4. Superhetrodyne Receivers
    a. Battery
    b. AC Powered
    (The new Harry Houck Award to be awarded in this class.)
5. Radio Advertising
    Magazines, Signs, Store Displays, etc.
6. Speakers (Horn & Cone)
    a. Original Plain Jane models
    b. Exotic Models
7. All American Fives (AC-DC Table Models) 1930-50
    a. Wood Cabinets
    b. Bright Phenolics (Bakelite/Catelin, etc.)
    c. Other Art Deco (Metal/Mirror/glass/etc.)
8. Tubes that tell a story
    Tube displays with an explan-

ation of their significance and history

9. Rare Books on Early Communications
10. Test Equipment Used in Radio Servicing
11. Consoles (First place Award $50.00 US Savings Bond.)
12. Television - Pre 1960
13. Transistor Radios - 1950's

Description of Awards

"THE PEOPLE CHOICE AWARD"

A special award presented to the winner as voted by the membership for outstanding public appeal.

"BEST OF SHOW"

Selected by the contest judges for historical significance and/or the presentation of the display and documentation as relates to the entry.

"FIRST - SECOND - THIRD"

Place ribbons presented in all classes

"SPECIAL AWARD

Presented for any entry or entries that may have an outstanding characteristic that will not fit in any of the established categories.

"HARRY HOUCK AWARD"

This is a new award to be presented in the Superhetrodyne class. The award will consist of a plaque and a $100.00 dollar cash prize. The rules of this award are quite simple. You as the contest entrant must compile and present a display with documentation, historical significance and display presentation. In other words you are going to have to work at it.

STRATOVISION

By Larry Babcock

We all know that KDKA was first with radio broadcasting in 1920. Not nearly so well known is that KDKA and its parent company, Westinghouse, was also very active in experiments with early television. These were experiments, which if implemented, would have had a profound effect on the long-term concept of television. Incidentally the Pittsburgh TV station, channel 2, also is called KDKA. It is permitted to use the "K" prefix east of the Mississippi.

In 1947, Westinghouse thought the way to go was with the TV stations broadcasting from aircraft flying at 30,000 ft. or higher so that a few stations could cover the entire U.S. These planes would all be connected via an air-to-air radio relay link to transfer programs between aircraft. Each aircraft would broadcast numerous TV and FM programs simultaneously. This was a grandiose well-planned scheme. The airborne Stratovision tests made in the late 1940's by Westinghouse and the Martin Co. were intended to prove the concept and obtain authorization for the system to be built and operated.

I was fortunate to receive on loan from Mr. John Cvetic, Engineering Mgr., KDKA-TV2, a copy of the Stratovision Flight Test Report. I found it so interesting that I copied the entire 510 pages. It is an extremely complete report with pictures and diagrams of the equipment, photos of the people involved, a listing and description of each flight made, details of the method for implementing coast-to-coast TV broadcasting, studies of weather, aircraft reliability, etc.

The Stratovision report explained that TV requires much more bandwidth than radio and therefore must be transmitted at a much higher frequency where the signal is not reflected back to earth by the heaviside layer. The signal is transmitted line-of-sight. With good placement of the transmitting antenna on the ground the range would be limited to about 50 miles. This could be accomplished for example by a 50 KW transmitter and the antenna on top of the New York City Chrysler Building. In 1948 when only 5 KW transmitters were available 50 miles range was unlikely.

Another consideration was the formation of networks. The two most promising methods to distribute programs were by coaxial cable or radio relay stations. It was known that AT&T would probably complete a coax cable cross-country link from Boston to San-Francisco in about 1950. It was also known that this link could not transmit the definition required for good black and white television and was totally inadequate for color. The construction cost for cable was $3.00 per foot or $100,000,000 to cross the country. The cost to tie together the total desired number of 400 TV stations would be much greater.

Radio relay would require stations every 35 miles. This would take about 100 relay stations to cross the country. In 1949, a radio relay network already connected Washington, DC; Philadelphia; New York City and Schenectady. From this it was known that each relay station added noise,

phase distortion and amplitude distortion to the picture. The picture was degraded further each time that it was processed thru a relay station. It was felt likely that with a very good picture put into the network at New York, it would gradually become worse, until in California it would be almost unrecognizable.

As the height of the antenna is increased, the line-of-sight distance and transmission range increases. At an altitude of 30,000 ft. a range of 211 miles would be possible compared to 50 miles on the ground. This increases to 300 miles range with the antenna at 50,000 ft. Another advantage is that whereas a 50 KW transmitter would be required to achieve these results on the ground, the airborne transmitter need only be 1 KW! Smaller transmitter power would be required from an airborne transmitter. The initial Stratovision plan was for the TV plane to be designed for an operating altitude of 30,000 ft. This would increase the area serviced by almost 20 times compared to a ground based system.

The distribution problem involved with a radio relay between TV airplanes was also considered. With planes at 30,000 ft. a 1 watt transmitter at 2,000 Mhz could easily transmit to a plane 400 miles distant. Directional antennas would be required. Tubes were then available to generate 5 watts at 2,000 Mhz and an airborne relay would require only about 8 stations to reach from coast to coast. This would greatly reduce the picture distortion created by coast to coast radio relay of a television picture. Such an airborne link could be designed to carry several television programs as well as FM programs and other services simultaneously.

A very special plane would be required for Stratovision service. It needed reliability, endurance and all-weather capability, but it surely did not need one thing which is usually required - speed. An initial design was made by Glen L. Martin in 1949. The plane was large enough to accomodate 4 TV transmitters, 5 FM transmitters, monitoring equipment and relay equipment, plus flight crew and TV operating personnel. Figure I shows how a single plane would function. All programming is relayed to the aircraft flying at 30,000 ft. and retransmitted over a service area of about 103,000 square miles. This is the combined area of New York State, Pennsylvania and New Jersey.

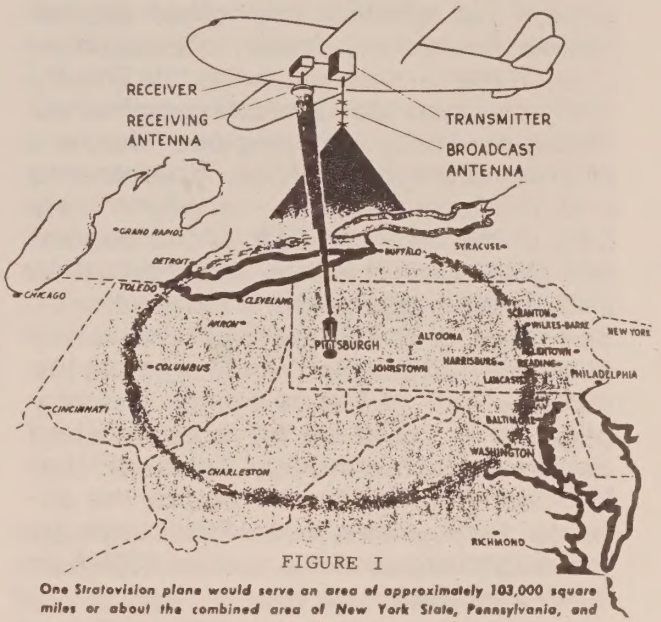


FIGURE I

One Stratovision plane would serve an area of approximately 103,000 square miles or about the combined area of New York State, Pennsylvania, and New Jersey.

TYPICAL FLIGHT TEST CREW

STANDING, LEFT TO RIGHT: F.G. NULLINS (RADIO), W.H. MC KINNEL (FLIGHT ENGINEER), W.A. DUCKWORTH (AIRCRAFT DESIGN ENGINEER), W.E. SMITH (PILOT), G.A. RODNEY (CO-PILOT).
KNEELING, LEFT TO RIGHT: A.A. MAC DONALD (RADIO), L.R. SMITH (RADIO), C.E. NOBLES (RADIO).

This one plane could transmit 4 TV and 5 FM signals to 16 million potential listeners and viewers. This concept allowed one plane to receive revenue from 9 rather than 1 advertiser. The entire concept appeared to be very technically and financially practical.

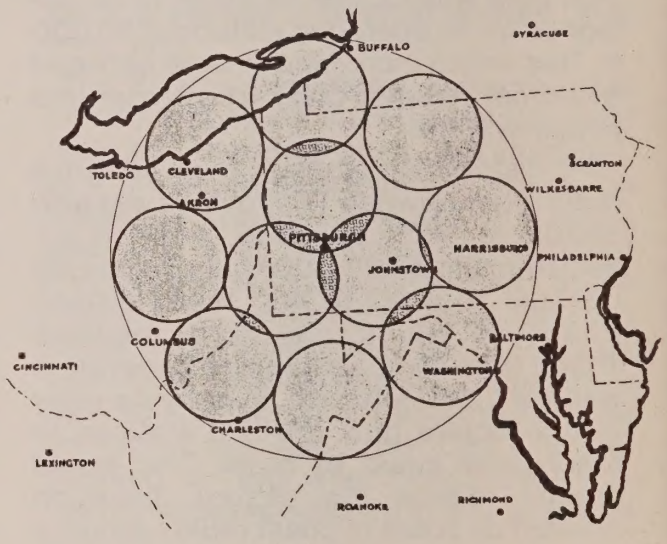
A scheme for covering the entire United States was considered. Each plane would have a transmission range of about 200 miles and relaying could be accomplished between planes flying about 400 miles apart. By operating planes over New York, Pittsburgh, Chicago, Kansas City, western Nebraska, western Colorado, Salt Lake City and Los Angeles, a program distribution network from Hollywood to New York would be established. These two cities were considered to be the main source of television program material, except for sporting and other special events. A very small amount of equipment in each plane could establish this link. By adding six more stations to this established network -- these six flying over Durham, Atlanta, Memphis, Dallas, Sacramento and Portland Oregon -- approximately 51% of the area and 78% of the population of the United States would be within primary coverage of one of these aircraft. See figure II. The Stratovision report emphasized that this plan would promote the rapid growth of the television industry because it could all be accomplished using existing technology. It was said that feasability was demonstrated by the airborne tests made over Pittsburgh by Westinghouse and its station KDKA in 1948 and 1949.

Eleven 50-kilowatt ground stations would be required to provide one program throughout the area served by a single one kilowatt Stratovision transmitter. Each plane, however, would provide nine simultaneously available programs.

FIGURE III

The economics of Stratovision were presented in the Stratovision Test Report. Pittsburgh was taken as a typical location. It was determined that 11 50 Kw transmitters would be required to service the same area from the ground. Since one plane serves the area with 4 TV and 5 FM programs an equivalent ground coverage would require 44 TV transmitters and 55 FM transmitters plus 33 relay stations. It was calculated that the operating cost for one Stratovision aircraft would be about $1,000 per hour compared with $13,000 per hour for equivalent coverage by ground stations.

The comparative areas of coverage for airborne and ground based transmitters are shown on figure III.



Eleven 50-kilowatt ground stations would be required to provide one program throughout the area served by a single one kilowatt Stratovision transmitter. Each plane, however, would provide nine simultaneously available programs.

FIGURE III

Other Stratovision advantages were stated to be:

* The sale of television receivers would be greatly expedited.
* Elimination of an expensive, inadequate and slowly built up program distribution network.
* Many people in rural areas would get television sooner.
* The airborne concept could accommodate color television easily.
* The source of program material would be greatly increased.
* Most "ghosting" would be eliminated. All programs to a receiver would come from one direction.
* Television would become a nationwide service much more rapidly.

When Stratovision was first announced to the press by Glen L. Martin the most obvious question was -- What about the weather? At 30,000 feet the primary weather concern is wind. Winds of over 80 mph were stated to occur less than 1.5% of the time at any location in the U.S. The proposed aircraft design with a cruising speed of 140 mph, 250 mph maximum, could accommodate any wind encountered in the U.S. What about storm areas? At 30,000 ft. all storms would be lower except thunderheads. These were stated to reach up to 200 mph. They were however very rare and local. They were said to be visible and easily avoided.

Another question at the Stratovision press conference was "What about aircraft reliability?" This had also been studied and it was reported that in a 2½ year period there had been seven forced landings during 340,000,000 miles of civil aircraft operation. To accomodate aircraft reliability concerns, the plan was for two airplanes to be in the air at all times at each transmitting location. The primary aircraft would transmit all signals while the second ship stood by in case of a malfunction. The probability of both the primary and the back up aircraft failing in any one 24 hr. day was determined to be one in 30,000,000! On an average there would be an interruption in service due to an aircraft engine failure once every 82,000 years! Planes would each fly for 8 hrs. with staggered takeoffs, one plane going up every 4 hrs. A second pair of aircraft on the ground would provide for maintenance periods for flight and electronic equipment. When weather disrupted the service airport, planes could be provided from adjacent service airports and fly the approximately 200 miles to the desired transmitting location.

The Stratovision aircraft, as conceived, required a flight crew of three including Pilot, Co-pilot and Radar operator/Navigator. The broadcasting equipment would be serviced by an additional six operators A lounge was to be provided for relaxation. This was then the plan proposed for the future of television in the United States by Westinghouse and the Martin Company in 1949. The airborne Stratovision tests they performed prior to this time were intended to demonstrate the practicality of this scheme.

In a future article, I will describe the flight test program, and why the planned program never materialized.

RADIO RULES THE DERBY

We have all, at one time or another, been witness to the Goodyear dirigible. It has given us a bird's eye view of many sporting events and has left many children in awe as they see this gigantic balloon motor across the sky.

The October, 1924, Popular Mechanics issue gives us details in no uncertain terms, with pictures, that a very large blimp equipped with radio transmitting and receiving apparatus was in use at Epsom Downs on Derby Day. Special vans with fold-down counter balance antennaes were on duty to help 1800 special police and a flying squad of 200 in automobiles locate traffic jams, and any other major problems that might occur. It could have been Super Bowl Sunday, except this all went on 64 years ago with the same quick response and perhaps even the precision as any modern day race at the Kentucky Downs.

Even though the radio equipment of those years was heavy, bulky and consumed more power than most storage batteries could provide over a long period of time, the operators mastered and made the most of what they had. They utilized the cutting edge of technology, which has brought us to where we are today.

Lloyd McIntyre

Indiana Historical Radio Society and Antique Wireless Association Regional Spring Meet - Friday April 22 & Saturday April 23, 1988.

We have outgrown the facilities at Auburn and have voted to move the 1988 meet to larger quarters. The Convention Center in Fort Wayne listed below will offer larger parking and Swap Meet space, more choice of restaurants, larger banquet facilities and reasonable prices for rooms, all under one roof.

American Plaza
1212 Magnavox Way
Fort Wayne, IN 46804
Located on SR 14 & I-69, Exit 105-A
For reservations call 1-800-645-7363

A program schedule will be available around March first. For information, write to:

John D. Foell, Co-Chairman
702 E. Ninth Street
Auburn, IN 46706

MEL'S CORNER

In this radio hobby of ours now and then you hear about some very unusual experiences happening to our collectors!! I just have to relate one I recently heard from no other than our most efficient and delightful ARCA Secretary--Mrs. Jane Denk.

Jane's Mother - Mrs. Marjorie Hoak Winings-now ninety-two years' old and in a nursing home, was one of the first volunteer nurses to go overseas in World War I. On her return from overseas duty, she married and moved to Washington, D.C. At the outbreak of World War II, Government offices were decentralized, and she found herself in Drexel Hill, Pennsylvania, in a home stripped of light bulbs and oil by the previous owners.

So out she went seeking a neighbor who might happen to have a spare light bulb. At a house across the street she knocked at the door. When the door opened, a fine old gentleman appeared--and stood back aghast!! He backed into a cabinet of dishes which promptly crashed to the floor. "My God!----Marge Hoak!!" This gentlemen was none other than the Commanding Officer she had served with all during World War One. What a coincidence! All of which shows if we travel the right paths of life, sunshine appears at the crossroads!

A lot of our collectors out looking for old radios follow up many leads. Sometimes this takes us to many strange places and many odd characters. Sometimes it is a joy-and at others just a disappointment. But we keep looking--and who knows? All part of our collecting!

I never forget the widow of a prominent manufacturer of super-hetrodyne receivers here in Philadelphia--who had an entire attic filled with radio components of her husbands' early days.

Contemplating a move shortly, she contacted the local township trash collectors and asked them to please come and pick up this trash!! Out of the third floor window of this house-with the aid of helpers-came tumbling down onto the lawn below piles of sets!

A neighbor of mine happened along and after seeing what was going on, rushed home and gave me a call. At this, I hopped in my car and dashed forth, just in time to see three big monster trash trucks heading down the street with one of them dangling long strands of green wire behind the grinders-smashing everything to bits and pieces!!!

The widow was sorry when I knocked on her door and explained that what she had tossed away might have been worth thousands of dollars! All that was left was an empty attic and some old pictures showing these many fine sets.

So--collectors beware! As you go down the paths of collecting be prepared to accept and face unusual events as they occur!

Speaking of trash! Another collector writes from Staten Island, New York, about his initial start in collecting old radios. His first set was a Radiola model seventeen purchased for $15.00. And where did he get it? From a sanitation worker! How about that!

He couldn't believe the condition which was pretty near in mint shape. A bit of dusting and polishing and off he went to survey some antique stores. Finally he came up with a horn speaker. Plugging it in--what a thrill when it suddenly burst into life.

He further states this all happened seven years ago and he listens to this Radiola every morning in the week! Now he has a large number of sets--from tombstones to bakelites plus a few early TV's.

While walking down the street one morning, outside a private home he spotted a pile of trash- ready for collection and there of all things, sat a Philco Predicta TV complete with the original stand. Well--how lucky can you get!!

While we collecters go looking around flea markets, antique stores, meets, who would think of our friendly trash collector as a source of access to finding goodies? On reading this I can see some of our collectors now greeting their trash collectors with more than the usual smile!

Cheerio!!

THE NEW ENGLAND MUSEUM OF WIRELESS AND STEAM, INC. were kind enough to cooperate with arca for this article.

MR. HARRY SHOEMAKER
ADVISORY ENGINEER UNITED WIRELESS TELEGRAPH CO.

HARRY SHOEMAKER

An Overlooked Wireless Telegraph Pioneer

by Thorn L. Mayes

PART 2

Part 1 of this article was printed in the Winter 1987 (Vol. 15, No. 4) issue of ARCA Gazette.

By the end of 1901, most of the nine operating companies of NorthWestern Wireless Tel. & Tel. were broke so on Feb. 24, 1902[10] Gehring (who earlier founded the American Wireless Tel. & Tel. Co. in 1899) formed the Consolidated Wireless Tel. & Tel. Co. which took over American and most of the nine operating companies. Shoemaker continued as chief engineer of Consolidated. The company advertised that it was set up to develope communication systems based on the patents of Dolbear and Shoemaker.

Consolidated originally capitalized at 25 million did not fare well, so on Oct. 28, 1902 its capitalization was reduced to $7.5 million. Shoemaker had been very active in his engineering work and by the end of 1902 had 50 patents issued to him on wireless transmitting and receiving gear.

In an attempt to improve lagging stock sales, Gehring on Feb. 28,1903[11] formed new company, the International Wireless Tel. & Tel. Co. with Shoemaker as chief engineer.

The American Cup Yacht races were to be held off the East coast of the U.S. in the Fall of 1903. Although induction coils had been the main source of high voltage for wireless transmitters, Shoemaker realized that a much more powerful set could be built using alternating current with a high voltage transformer, so he and Greenleaf Pickard installed a 2 KW- 120 cycle alternator with open core high voltage transformer in a small schooner for reporting the races. This set was so powerful that it drowned out the signal from the American Marconi and American DeForest transmitters which were also reporting the races.

By the end of 1903 Shoemaker had been issued 65 patents on wireless, more than had been issued to any other wireless engineer.

Stock sales did not improve and a Jan. 6, 1904 Camden N.J. newspaper reporting the stockholders meeting of the International Co. stated that a resolution was passed, authorizing the combination of the International Co. with the American DeForest Wireless Telegraph Co. This consolidation gave the American DeForest Co. the use of Shoemaker patents, resulting in a major improvement in their equipment.

Gehring was only interested in selling wireless stock to make money, not in setting up communication systems, so Shoemaker was free to work on improving any part of the wireless equipment. Several of his early patents covered improved receiving tuners and detectors, which DeForest badly needed. Realizing that the 10 inch coil was a low power device, of under ½ KW.

The high voltage condensers consisted of from 4 to 12 leyden jars, or Marconi jars as they were sometimes called. They were special high dialectric cylindrical glass jars, 5" diameter, one eighth thick, open at the top, 15" high, coated on the inside and outside with tin-foil to a heigth of 9". It was difficult to make a good, lasting connection to the tin-foil and it was easily damaged.

Shoemaker developed a method of etching the inner and outer walls of the jars, spraying them with a conductor like graphite, then electroplating a heavy coating of copper on to the inside and outside. This method produced a much more satisfactory, longer lasting product.

Dr. Gehring was now out of the wireless business, since Abe White dominated the

10 — Data from incorporation papers, Territory of Arizona.
11 — Data from incorporation papers, State of New Jersey

American DeForest Co. Disagreements on policy soon developed between Shoemaker, DeForest and White so Shoemaker resigned from American DeForest and with Col. John Firth, on Sept. 14, 1904[12] formed the International Telegraph Construction Co., capitalized at $100,000.

This company immediately started building equipment for the Army and Navy and soon became their chief supplier.

"At the time the Masie Wireless Tel. Co. (1905) was awarded their contract, Shoemaker was awarded one for 21 complete sets of apparatus. Five of these were supplied with 5KW, nine with 3 KW, one with 2.5 KW, three with 2 KW, one with 1.7 KW and one with 1.25 KW tranmitters. This equipment came to be regarded as the best of its time by naval radio operators. Shoemaker was a most capable radio engineer and had he been able to obtain adequate financial support he might have established a continuing business."[13]

Electrical World of June 4, 1908, states that, "The Shoemaker system of wireless telegraphy is preferred over all others by the U.S. Navy. Shoemaker who is less than 30 years old, has his equipments on eleven of a total of 16 battleships that are equipped with wireless."

In addition to complete systems, the International Co. was producing high voltage transmitting condensers, variable condensers for receivers, wave meters and various measuring instruments used for wireless work.[14]

In February 1907 Firth left International to form with Greenleaf Pickard, the Wireless Specialty Apparatus Co. Without Firth's managerial ability, Shoemaker was not able to keep Col. C.C. Wilson, Pres. of United Wireless, from gaining control of International Telegraph Construction Co. through stock manipulations. United took over the Shoemaker Co. in July 1908, and Shoemaker became chief engineer of United Wireless Co.

By 1908, the importance of wireless on shipboard was well recognized for at the end of 1907 over 100 U.S. ships were equipped. By 1912, this number would be near 500, so this was a period of rapid expansion, with United Wireless having almost all of the business.

Shoemaker's former factory was immediately converted over to building equipment for this expansion. First came the type C tuner, built for small ships on coastwise duty. It covered three bands, 300-450 and 600 meters. Few of them were built which accounts for their present scarcity..

He next concentrated on a tuner that would be more sensitive, smaller, and easier to operate than the DeForest 3 coil, type B tuner. The type D. tuner was the result! They were simple to make and rugged. They were the standard equipment for shipboard and land stations through WWI.

The Wireless Institute was formed in Jan. 1909. Shoemaker was a charter member and signed the roster as Chief Engineer of United Wireless. Robert Marriott was the First President and Shoemaker was Vice President. Proceedings of the Institute for Sept. 1909 contains an excellent 8 page article, "The Production of High Frequency Oscillations," by Shoemaker. It explains the proportioning of components of a wireless transmitter for optimum performance and the importance of designing the equipment to fit the available aerial. He closes with the statement that few ship's antennas are large enough for a 2 KW set and that most of them are limited to 1 KW for efficient operation.

Shoemaker recognized that more selectivity could be obtained if the primary and secondary coils of the tuner could have variable coupling, and by 1911 he had developed the type E tuner which had a loose coupler mounted on top of the cabinet, with a variable air condenser on the inside for close tuning the secondary coil.

A carborundum crystal detector was used on all United sets. The detector units for the D and E tuners were the same.

He had patented the transmitter design having the spark gap mounted inside the transmitting helix. All new United transmitters were built using this construction.

In 1912 when American Marconi took over United Wireless, Shoemaker was made chief development engineer, under F.M. Sammis, who was the chief engineer for American Marconi Co.

To Be Continued

12 —From General Wireless News, by P.C. Kuhlman, April 1913
13 — From History of Communication- Electronics in U.S. Navy page 104
14 — From, "The Story of my Life," by John Firth. George Clark papers Radioana file SRM5-737

OUR NEWEST MEMBERS

Larry Wilcox, Berkeley, CA
Alfred H. Heemstra, Grand Rapids, MI
David J. Boyle, Littleton, CO
Todd D. Ryker, Bethany, CT
Peter Oppenheim, Bayside, NY
T.R. "Chip" Taylor, Bradenton, FL
Larry E. Parkhurst, Boulder, CO
James McBurney, Santa Clara, CA
George Gorman, Billerica, MA
Arthur L. Iverson, Troy, MI
Michael T. Greene, Brookville, MD
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Michael Shabala, Grant Park, IL
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Wayne G. Libby, Merrifield, VA
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John W. Caldwell, Boco Raton, FL
Norman M. Landis, Kirkwood, MO
Terry R. Adelwerth, Riverhead, NY
Mark McCoy, Englewood, CO
Edward S.A. Zyszkowski, Baltimore, MD
Charles L. Crawford, St. Albans, WV
Allan Jahnke, Colorado Springs, CO
Philip R. Lindstrom, Royal Oak, MI

Reinstated:

James J. Barratt, Camas, WA
Marc de Moor, De Pinte, Belgium
John J. Fritz, Lancaster, PA
Charles A. Lauter, Miami, FL

Deceased:
"Andy" Schaefer (E.E.)
Hackensack, MN

LETTERS

Jane & Bill

Just a quick note to send along with my dues —

I was glad to see another article in the Gazette by James McKinnon on DXing. I had missed them in the last issues. The Crosley 51 article was particularly interesting because I just found a Crosley XJ at a swap meet here. It has 2, repeat 2, book capacitors (oops, condensers) — not a single multiple plate timer to be found! I now have 3 oldies: AK 20 Compact, RCA Radiola 20 and the Crosley XJ. Not too bad for southern Arizona. There are still interesting things to be found and preserved. My appreciation to all the contributors to the Gazette.

Frank Schmidt
Tucson, AZ

Dear Mr. Drake:

Has anyone heard of a "Polydyne" radio? The paper label inside the cabinet has disintegrated, although I think the model number is 523. It's in a metal cabinet and uses the following tubes — 71A, 26, 27, 22, 80.

The front panel has a tuning knob marked 0-100 (no dial or lamp), and has a toggle on-off switch flanked by volume and antenna trimmer controls. The name "Polydyne" appears around the toggle switch.

I haven't been able to find it in Rider's. A.C. Dayton made a "Super Polydyne Six" in 1924, but nothing is shown for a Polydyne A/C set with the 523 model number. I will appreciate any information anyone has on this oddity.

Thank you.

Very Truly Yours,
Jack Casey
3410 Font Hill Drive
Ellicott City, MD 21043
301-461-1141

Dear Mr. Drake,

I have restored radios over the years to the point of getting them electrically working (and in one case I refinished a Radiola 17 cabinet) and playing again. I have also read much about the discoveries of amateur and professional archaeologists of ancient things.

Thinking about the restoring business more deeply I asked myself "Would future historians like to see electronic equipment (especially radios and tv's) exactly as it came off the assembly line?" For them the main concern might not be did it work and how well, but how much had it been restored, so that some of these display houses now have electricity, and the cars have overpolished cast metal parts.

I think some collectors ought to keep their sets perhaps reasonably cleaned on the outside, but unchanged, if they can determine that the set was not altered by

previous owners. Hiding new caps in the old cap shells, I feel is altering the original product rather than accurately restoring.

Many restorers of today lived through at least some of the age of tubes, and are quite familiar with how tube sets look inside, but think of those in the future who will rarely see a real, original tube set. I still remember during WWII a local radio repairman, in our living room opening Dad's 1936 18-tube Midwest radio, and displaying the marvelously colored underchassis of the set with all the wires and cables. (We still have the set).

If restorers of today want to get their sets working electrically, I suggest that perhaps a color photo of the insides *before* restoration would be a valuable record for the curious of the future who will never (due to tube sets becoming scarcer all the time) be able to experience the wonder of being the first, since it was manufactured, to see the inside of electronic things built with tubes. Stereo camera pictures would be best.

Not restoring, with tools, would also be less work, and now you have a good reason for 'hands-off' policy. Clubs holding contests could include a category for these tool-free sets called say, 'pristine condition'.

Sincerely,
Frederick Butterfield

Dear Sirs:

Some 15 years ago I acquired one of the long obsolete RCA Radiotron UV-199 receiving tubes (the same as the UX-99 except for a metal ferrule bayonet base, ceramic bottomed, with 4 short metal pins). It is still in its red printed cardboard box with padded wrapper and an accompanying technical data sheet containing suggested circuits.

I acquired it because of the notes on the box and data sheet that said it was manufactured by General Electric under contract to RCA and both logos are printed on the tube base as well. At the time these two were fierce competitors in the tube business (though since merged), and I found it amusing.

When acquired, the tube tested good, and presumably still does as the silvery getter still looks in good condition.

I would like some collector to have it. If rare, I would prefer for someone with historical/museum connections with one of the two corporate groups to get it, or perhaps some ex-employee.

I would appreciate your forwarding this information to an appropriate person you may know.

Sincerely,
A.P. Yundt

Ye Old SWAP SHOP

All ads and Swap Shop items are printed in the Gazette free of charge. We do ask that you write your ad on a separate sheet of paper, type if possible, or print, and be sure to include your name and address. We reserve the right to edit all ads. ARCA is not responsible for any transactions, of course.

FOR SALE: Late 1950s Zenith #R519V coral plastic clock radio; 1954 Zenith #5R10 forest green plastic with ivory handle, knobs & 6 pushbuttons; 1948 Truetone #D2815 brown violin-shaped bakelite, 6 pushbuttons. Novelty horse-mounted on wood base radio, 1950s; 1940s Federal #1540T chinese-looking breadbox style wood cabinet with drop front panel. Horizontal woods-1938 "No name" 4 tube plus ballast, art deco, gold & blue on white dial, smaller set. Cathedrals-1931 King 4 tube TRF mantle set with false front. SASE Ripley, 2276 Holloway, Maplewood, MN 55109.

FOR SALE: WWII LS-7 speaker $15.00, 800 Radio Tubes (1930-1960) $250.00, RCA Slimline Mike, $35.00.
Frederick W. Chapman, 1130 N. Lk. Pkr. Av. AB218, Lakeland, FL 33805.

WANTED: 2 Radiocraft white dials, DeForest Radiohome, Grebe CR-6. Jim Collings, 12005 Victoria Pl., Oklahoma City, OK 73120

WANTED: Your Remler Sets, parts or literature. Also will reimburse set owners for photos from their Remler collection. Rick Ferranit, 254 Florence Avenue, Arlington, MA 02174

WANTED: Need five honeycomb plug-in coils (Remler, DeForest, Coto-coil, etc.) one each of 100., 200, 250, 1250 and 1500 turns. Trade or cash. Ross Smith, 1133 Strong Ave., Elkhart, IN 46514.

WANTED: Control grid connectors to fit a 6J7 vacuum tube. Need two but could use six. T.A. Drogoski, 507 Coal Valley Road, Clairton, PA 15025.

FOR SALE: Crosley RFL-75; Three horns, Atlas, Amplion, Bristol, all for $95. Four radios, Philco 38-34, 39-70, Crosley 181 and GE K-43 cathedral, all for $135. Philco 60, $75; Philco 54, $50. Riders 1-21, dial belts for all sets, $1.50 each. RCA 4X, $45; Pioneer Dynomotor, $10.
WANTED: Fada 43, cabinet for Philco 89, breadboards, cathedrals. Gary Hill, 1507 Ridge Ave., New Castle, PA 16101, 412-654-9335.

FOR SALE: 3 tube sound system intercom. Stewart-Warner Model 51T146 table model (wood) works great. Motorola A24N gray plastic. Zenith short wave Model L50A. Old Metal hexagon speaker Pausen 12½" high. RCA Radiola 16 wood case 8x16x7½. Book of old radio station letters. Muzak wall speaker with vol. con. Magnovox hifi phonograph. Grebe synchrophase 7 wood cabinet. Cobra clock with light. Bronson CB, AM, FM radio. Norman Landis, 1315 Marbendale Ct., Kirkwood, MO 63122, (314-821-7933)

SCHEMATICS FOR SALE: Radio receivers 1919-1970's. Auto radios, phonos 30's to 70's. Send Brand name, model no. and SASE. Scaramella, Box One, Woodnsocket, RI 02895-0001

WANTED: Atwater Kent sets of the following models— Numbers 10-12-19-21-32-48-50. Will pay reasonable prices for same. Advise condition.
Mr. Tod D. Ryker, 2 Clay Road, Bethany, CT 06525

SALE: Philco Model 46-1209 with phono floor model. RCA-Radiola 60 Super-Het with floor stand and Utah speaker. RCA Victor TV Model T-100 with stand. Charles R. Neighbors, 36 Fayette St. ,Dunbar, PA 15431

SALE: Some very fine replica catalogues now available of Atwater Kent Tusca - DeForest - Radiola - Sears Wireless Specialty 1919 and others. For details and price list contact: Arthur W. Aseltine, 345 Glenwood St., Ann Arbor, MI 48103

WANTED: For large collection of Hallicrafters equipment. Still need many receivers—transmitters as well as catalogues—literature—ads or hear from former employees. Historical data being compiled. I buy most anything of Hallicrafters that is not in my present collection. Please state what you have available and what you want for it . Max DeHenseler, 333 East 43rd St., Apt. 919, New York, NY 10017

JIM CLARK ENTERPRISES: Announces a new computer service to collectors — looking for sets — parts — catalogues — magazines — various radio components. The list is large! Write me for full details and current lists now available. Jim Clark Enterprises, 1292 Starboard, Okemos, MI 48864

FOR SALE: A rare opportunity these days to acquire a truly fine WWI Navy SE-1420 receiver! Set in exceptionaly fine condition for this era. From the estate of William Gould prominent engineer of U.S. Army Signal Corps. K-2NP. This set was updated by the Signal Corps in 1931 to conform to BC-131 specification which enhances its performance. Offers now being considered. Mrs. Leah Gould, 926 Woodgate Ave., Elberon, NJ 07740
Tel: 201-222-2271

SALE: Scanning Disc early TV's replica parts kits — assemblys and literature — and book available on these early sets. Write me for further details. Peter Yanczer, 835 Bricken St., St. Louis, MO 63122

SEND: For latest catalogue of all those tubes — parts and items needed for restoration of old radios. Large stock on hand at all times. Antique Electronic Supply, P.O. Box 1810, Tempe, AZ 85281

WANTED: All types police scanners, crystals, tube-type C.B.'s. Looking for Lafayette HE-20-D in mint condition. Let me know what you have. Mr. Michael S. Sabodish Sr., 11-A Matawan Avenue, Clifford, NJ 07721.

WANTED: Internal Wooden Horn Speaker for Amrad Cabinette or a similar size to fit in a space 15L x 10W x 4.5 will also take a junker set or an early Radiola Portable. Also need a Amrad 2 Dial Neutrodyne, 1933 Kadette Jr. portable, & Firestone 4-1-39 radios. Andrew Mooradian, 5 Priscilla Lane, Winchester, MA 01890, 617-729-1873

WANTED: Early Crowe (or similar) Airplane Dial and small two inch dial plates 0-100. Also need cabinet (plain, lift top, any condx) for Remler Superhet size seven inches by twenty one inches to accomodate base board appx. nine inches deep. Have early electronic books and magazines for sell (that's the way we Cajuns speak!), or trade. Wes Chatellier, 1950 Chevelle Dr., Baton Rouge, LA 70806

WANTED: Two audio transformers for Radiola 20. Don Sturzenbecher, Rt. 3, Box 28, Sioux Falls, SD 57106

WANTED: Manual for Heathkit model 0-12 scope. Itsuo Yano, 80 Lehua St., Kahului, HI 96732

ANNOUNCING. . . Standard audio cassette and reel to reel tapes. Prerecorded with 48 line or 60 line mechanical television images. Each tape contains the video and synchronizing signals necessary for the use and demonstration of mechanical Television Receivers. They may be used with any good quality tape recorder adn even the simplest of receivers. Subjects include Felix the Cat on a rotating base, live pickups and movie cartoons. For information send a SASE (2 stamps) to: Peter Yanczer, 835 Bricken Place, St. Louis, MO 63122

WANTED: Cabinet (Box) for my SCR 54. This is set Box BC-14. Also need cabinet for Madison-Moore Receiver. Panel size 7"x26". Needs 10½ deep for chassis. David McKenzie, 516 So. Exeter St. Eustis, FLA 32726 1(904)589-0149

SCHEMATICS FOR SALE: Radio receivers 1919-1970's. Auto radios, phonos 30's - 70's. TV's 40's - 70's. Send Brand name, Model No. and SASE to Scaramella, P.O.Box One, Woonsocket, RI 02895-0001

WANTED: Still looking for Radiomarine AR8510 or Similar LF-VLF Ships Receiver. W. Britton, 225 So. 17th st, St. Helens, OR 97051

WANTED: AK-337, 825 and others. AK-Rectifier tube. Ophelia Nicholson, 3423 S.E. Long, Topeka, KS 66605

FOR SALE: Rare early TV programs on video cassette, also radio and TV books, AK, RCA & Sparton manuals, tubes, grill cloth, caps, and more. SASE to Dan Szablewski, 1204 Andrews Ave., Lakewood, OH 44107

FOR SALE: 1967 Lafayette parts catalogue 510 pages, $12.00, 1969 Lafayette parts catalogue 511 pages $12.00, 1962 Allied catalogue, 440 pages, $12.00, 1971 Allied catalogue, 459 pages, $10.00, 1972 Allied catalogue, 467 pages $9.00 Signal Tracer Model CA-11, Oak case-Exc. $12.00, Modern Radio Servicing by Ghirardi, 19325 $10.00. New power transformer, channel frame. Sold by Allied Radio, No. 6-K-1 VF, 250 Volt C. T. $4.00 Cleon L. Boothe, Box 235, Cohocton, NY 14826

WANTED: E.H. Scott sets super 8, 9, 10, and shield Grid 9, Symphony - all wave 2 volt- Super XII - Telematic. Atwater Kent sets 38, 41, 45, etc. and "K" speaker.
TRADE/SELL: Thompson V50 - Cockaday LC27 - Metrodyne Super 6 - Roth Downs Orpheus King 80 - Radiola III - Radiola VIII - Scott Laureate - Magnavox D, RCA 103 - RCA 106 - Crosley Dynacone - Trimm horn - Majestic horn.
TRADE: Scott Allwave 15 - Grebe Synchrophase - Bosch Cruiser, Crosley PUP - Showers Consula.
Kent King, 3637 Liberty Road, Delaware, OH 43015 (614) 363-3219

WANTED: Tone-Beam Tube for Atwater Kent Model # 612 console. Words "Duovac" and "Tune-a-lite" printed on tube base. Sam Wrenn, 2314 Seminole #1207, Arlington, TX 76010

WANTED: Magnavox horns, audio amplifiers, receivers, 'A' tube, from early 20's. Cash, no trades. Porcelain rheostat for Audion mint condition. Charlie Rhodes, Journey's End Road, Vista, NY 10590 (914) 533-2503

WANTED: Amplion AR-19 driver, chassis for Crosley 48,59. Looking for any Midwest table model radios, early kadette plastics, odd horn speakers. Will trade Grebe R0RQ, McIntosch MC-30 amplifiers, Emerson Patriot catalin. Greg Farmer, 71 Rice Creek Way, Fridley, MN 55432 612-571-6062

FOR SALE: 1925 Stewart Warner model 300, exc. condition, with battery cable. Uses five 01A tubes (replaced in 1931). Has instruction label inside lid, $150. 1930 Philco model 20 lowboy, works well, needs volume knob and speaker cloth, $125. Jack Casey, 3410 Font Hill Drive, Ellicott City, MD 21043, 301-461-1141 evenings

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FOR SALE: Radios. TVs. parts, tubes, books, over 200 items. Please send a business size SASE with $.39 stamp, for latest catalogue with photos.
John Kendall, P.O. Box 436, Fallston, MD 21047

WANTED: Oscillator coil and 2nd IF transformer for 1937 Motorola Model 5T (chassis 5-1). Mark A. Behrens, 11116 E. 35 Terr., Independence, MO 64052

FOR SALE/TRADE: 1938 National Radio Institute Radio Course: Approximately 80 booklets in two NRI binders. 1938 NRI Test Answers in NRI green binder. 1938 Radiotricians Service Manual in black binder. 1952 NRI Radio Course in NRI binder. All in good condition. Would like to trade as part payment for any crystal radio, or one or two tube set. Or sell outright. Please make an offer. Richard Spratley, 2112 McLain Street, Chesapeake, VA 23324, 804-545-2402

WANTED: Meter (or name of place to ship for repair) for Precision Apparatus Co., Inc., tube and battery tester series 10-12.
WANTED: Manual for Precision Apparatus Co., Inc. VTVM Model no. EV-10, will pay copy cost plus shipping or will copy yours and return your manual plus shipping cost.
WANTED: Latest printing of Radiart or Mallory Vibrator Guide. Will pay copy cost plus shipping or will copy yours and return your guide plus shipping.
Arnold R. Dilley, KB8AYU, 211 Sutherland Drive, So. Charleston, WV 25303

WANTED: Beginning Belgian collector is looking for construction articles for simple homemade receivers (crystal sets 1 & 2 tubers); also info on making components; copies ok; would like to communicate with other collectors.
DE MOOR - Vredestraat 13-B-9720 DE PINTE, BELGIUM, EUROPE

LATE ADS & ANNOUNCEMENTS

Houston Vintage Radio Association will hold its Ninth Annual Meeting on April 23 and 24, at the Sheraton Kings Inn. Swap Meet Sunday morning on the parking lot. Full program on Saturday. Write to Gordon Rolston, 4415 Haiti Ln., Pasadena, Texas 77505.

The Antique Radio Club of Illinois
RADIOFEST '88
August 11, 12, 13
Holiday Inn, 345 River Road, Elgin, IL
For Reservations Call 312-695-5000
For more information contact Jeff Avlik, 803 N. Chicago Ave., Rockford, IL 61107 (815) 399-1902

The Mid-America Antique Radio Club will be conducting its spring auction on April, 17th, 1988. The auction will be at 7500 W. 75th Street, Overland Park , Kansas, and will commence at 1:00 p.m. We would be very grateful if you would consider printing an announcement of this event in your publication.

I would also like to take this opportunity to introduce myself as the new Secretary-

Treasurer of the Mid-America Antique Radio Club. I believe our club may have a reciprocal arrangement with your organization regarding exchange of publications. At present, our only publications consist of announcements of auctions and swap meets. We hope to re-initiate our newsletter, "The Broadcaster" in the near future, but no definate date has been set yet. If this situation impacts our reciprocal arrangement with your organization, please inform me.

Please also note the new mailing address listed below. Thank you.

Sincerely
Sheldon Wheaton
1120 Virginia Ln.,Apt. #1
Olathe, KS 66061

HELP: Any information on Splendid Grand made by W.F. Main Radio Co., Cedar Rapids, Iowa. Walter Furtak, WB4LWE, 4317 Honeysuckle Ave., Palm Beach Gardens, FL 33410

FOR TRADE/SALE: ELCO Model 425 Oscilliscope; BURWEN Model DNF 1000 Dynamic Noise Filter. Peter Oppenheim, 35-20 204 St., Bayside, NY 11361

Send Large SASE for list of Radios, Donald Juleen, 6252 Ledge Rd., Sturgeon Bay, WI 54235,414-743-7922

THIS BOOK WAS FREE in 1928. "The story of the Mercury Super Ten", 8.5" x 5.5", 36 pages. Quality reprint available for U.S. $4.50 ppd. from Bob Murray, 3216 Assiniboine Ave., Winnipeg MB Canada R3K 0B1.

ARCA is always looking for interesting pictures. Look through your old gear and see what you can come up with!

ASK . . ANY . . RADIO . . ENGINEER

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Crowning Adventure
of Burgess Radio Batteries

They Flew Over the North Pole with Byrd

ON May 9, history was made . . . American history . . . World history . . . undying history.

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BURGESS
RADIO BATTERIES

Old-timer's Notebook

James A. Fred

OLD-TIMER'S NOTEBOOK
James A. Fred
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Q. Dear Old Timer: I have a five tube postwar Sentinel radio that acts very strangely. When I first turn it on, it will play normally for 2 or 3 minutes and then all the stations fade away and I can receive only 2 local stations. At the same time I get a lot of static that doesn't vary in volume as I rotate the tuning capacitor. What could the problem be?

A. The problem may be a high resistance leak across the trimmer capacitors in one of the IF transformers. The solution is to replace the IF transformer. This answer is based on an experience I had back in the 1950's

The first set I found these symptons in was a 5 tube GE plastic table model made around 1950. One way to find this problem is to unsolder all the wires, except the B+ wire, from the IF transformer. The B+ wire will be soldered to one end of the primary winding. Take your DC voltmeter and connect the black test lead to B - and touch the red test prod to one of the secondary winding terminals or a lead wire, if the capacitor is leaky, you will get a voltage reading which may vary rapidly from zero to 100 volts. The first time I found this problem, I connected across a Hi-Pot voltage tester. It took only about 600 volts to break the capacitor down permanently.

After this experience I found several more sets with this same complaint. Putting in a new IF transformer always repaired the radio.

In your case the voltmeter will probably find the leaky trimmer capacitor in the IF transformer. It doesn't do much good to try and measure the resistance across the capacitor because the resistance is so high that a common ohmeter with only a 1.5 or 3 volt battery will read infinity. New IF transformers are becoming very hard to find, but if you search the "Radio For Sale" ads in the club bulletins you will find what you need.

Q. I have a Majestic model 60 that suddenly quit playing and the tuning meter hit a full scale reading. What could be wrong? I've looked for a shorted capacitors, but haven't found one.

A. If you have a schematic drawing, you will see a .1 mfd. capacitor connected from the plate end of each IF primary. The reason you don't see them in the radio is because they are potted in the cans with the IF transformers. You can check with an ohmmeter to see which IF has the shorted capacitor. There is only one way to get to the capacitor.

First unsolder the wire leads to the transformer and remove it from the chassis. I used a single burner hotplate and a variable voltage transformer to melt the potting compound. I removed the shorted capacitor and soldered in a new .1 mfd., 600 volt DC capacitor. I then poured the melted compound back into the can. Another way to do the job after you melt out the compound is to remove the capacitor. Now unsolder the red wire and bring it out of the can. Connect this red wire to a capacitor mounted on a tie terminal outside the can.

Since you have disturbed the IF transformer wiring, it would be wise to touch up the alignment on both IF transformers.

Q. I have an RCA model 26X3. Why do they have a "Low-High" wave band switch? Also in order to pick up short wave on this radio, is it necessary to have a special antenna? Why do they have a "Phono" marking on the front of the cabinet, when there is only one jack for this use?

A. I will answer your questions in order. Your radio will receive two bands of frequencies; the first is the broadcast band of 540 to 1720 kilocycles. The second band of frequencies is 8.7 to 15.6 megacycles. This is referred to as the short wave band. Because short waves carry radio signals much farther than the broadcast band, you can receive signals from stations in foreign countries. You will see a short piece of wire stapled to the inside of the cabinet with one end connected to an external antenna screw. Your radio will

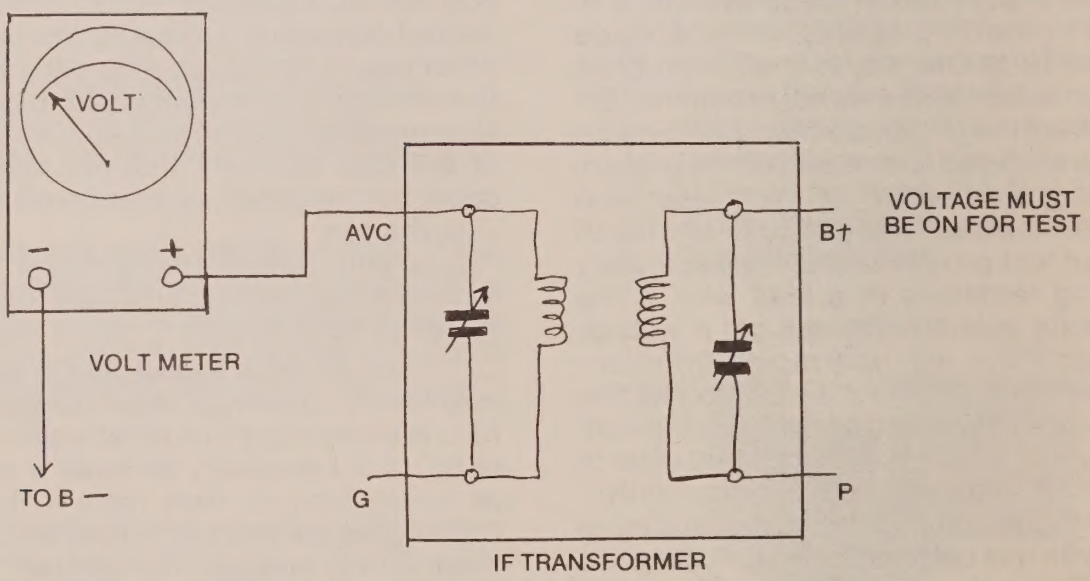
receive a few of the stronger stations with that short wire. If you are a serious short wave listerner, you could put up an insulated long wire antenna (50 to 100 feet long) outside. This would pick up stations from around the world.

You will note a Phono jack somewhere on the chassis. This is where you plug in a record player. If you trace out the circuit on the schematic drawing, you will see that the Phono jack is connected to the selector switch. When you are using either the broadcast band or short wave band, the output from the second detector goes to the top end of the volume control. This allows you to control the volume of the radio signals. When you turn the selector switch to "PHONO", you connect the phono jack to the top of the volume control. Now you can control the volume of the record player. If it wasn't wired this way, you might hear both the radio signals and the record player at the same time.

Q. Last week I received a telephone call from Scott Brady, 8316 Northwest 109 Terrace, Oklahoma City, OK 73162. He has a Philco model 41-629 Radio-Phono-Recorder combination. This is the record changer with the Light Beam Reproducer tone arm. To those of you who are unfamiliar with this tone arm, let's just say that the needle has a tiny mirror fixed to it that reflects a beam of light on to a photocell to reproduce the sound on the record. He needs a new needle and some help in getting the recorder to work. My offer of help is as follows.

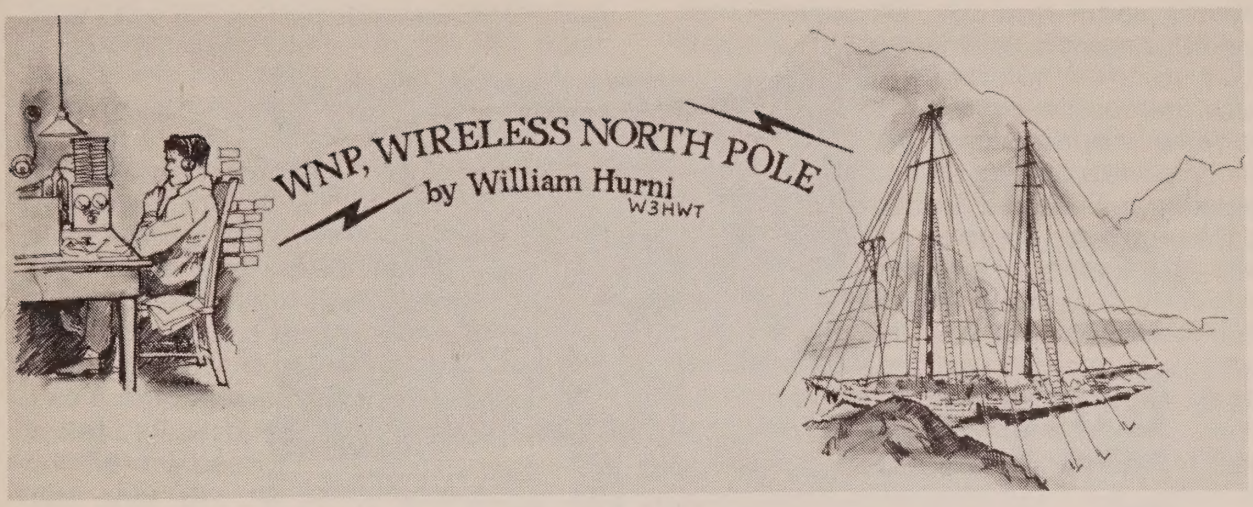
A. Since I have no needles or other parts for this record changer, I am appealing to the readers of this ARCA bulletin to help Scott in any way they can. Surely someone out there is Radioland has had some experience with this record changer-recorder. If you have a new needle or have any information that will help him please write to him at the address above.

Keep the cards and letters coming. I am here to help you.



HOW TO CHECK FOR A
LEAKY TRIMMER CAPACITOR

J. Fred 2-15-88



WNP, Wireless North Pole

written by
William Hurni
W3HWT
329 Evergreen Dr.
North Wales, PA 19454

Amateur radio, as embodied in the American Radio Relay League, was instrumental in the technical and practical growth of radio. From its inception in 1914, it produced a focus point for the numerous radio experimenters of the time and through Hiram Percy Maxims' vision, provided direction for that heterogeneous and disparate band of wireless enthusiasts. Message relaying networks were laid out, technical information disseminated, experimentation was promoted and reported through its journal, QST. Maxim made sure that the ARRL and the amateur were involved in the growth and development of radio.

With such a formidable organization in place, it was only natural that when in 1923, Captain Donald B. MacMillan became interested in two way communication between his next Arctic expedition and the outside world, he came to Maxim and the ARRL for assistance in his venture. At the time, the most advanced equipment and operating expertise was in the hands of the amateur radio fraternity. MacMillans' boat which was to carry his small team to the Arctic was named the Bowdoin. It was an 88 foot schooner with a crew of 7 men. Little room could be spared for a radio station so a small, low power type amateur station was the order of the day. Little was known about the type of propagation that would be encountered so MacMillan called on the ARRL and its members to listen for him and exchange two way communication. The network of amateur stations throughout the world should and indeed did overcome the propagation pecularities that arose.

MacMillan had been an arctic voyager before and knew first hand of the loneliness experienced by himself and his men on similiar expeditions and radio was presented as a solution to this problem. However, this provides only superficial justification for inclusion of radio equipment on his next arctic expediton. Both MacMillan and Maxim were entrepreneures. MacMillan raised money for his adventures by writing and giving lectures about his previous exploits. The more attention he could draw to his expedition the better. Both he and Maxim saw the partnership to their advantage, being able to communicate by radio an ongoing report of the expeditions progress. This was evidenced by the arrangement with the North American Newspaper Alliance to send back exclusive news releases by way of the ARRL to member newspapers. With the general excitement over radio at the time, these reports would generate wide readership for MacMillan's adventures, the newspapers involved and of course the part played by amateur radio would receive wide publicity. This dichotomy of interest was further evidenced by the almost complete absence of information about the communications aspects of the expedition in National Geographic, which provided significant funding of the expedition and an equal and opposite bias in QST. Radio manufacturers also got into the game. Chicago Radio Laboratories (Zenith) provided the receivers and transmitter encorporating the latest technology that a group of amateurs could provide, without charge. Burgess Battery Company provided the receiver B batteries and spares, gratis. Thordarson also provided equipment and the list went on. The manufac-

Some of the advertisers who took advantage of their association with the expedition

turers of course made good use of the fact that their equipment was on the polar expedition. The ARRL and amateur operators benefited from the positive publicity of such a feat. The TVI troubles that hams today have is nothing compared to the broadcast interference problems hams were having in 1923. The positive publicity the hams would receive from such an accomplishment would go well with the radio public and it would aid in the continuing growth in stature of the ARRL. It was a situation in which success would benefit all participants and thus brought out the very best effort from all concerned.

Not only was the ARRL to provide the network of stations to receive the signals from the north, MacMillan also asked them to provide a group of candidate radio operators from which MacMillan could select a man to accompany him to the Artic. As always, time was of the essence and in short order, the ARRL board of directors recommended Donald H. Mix, ITS for the job. Mix had been in the radio game for 6 years and was a member in good standing of the ARRL. At the time he was an employee of theC.D. Tuska Co. whose founder, Clarence D. Tuska was also a co-founder of the ARRL. MacMillan, after close questioning found him suitable and he was made a member of the crew. One might suspect that he may have been the only candidate. After all, one can imagine that it would not be the easiest task to locate a competent young man who was skilled in the radio art and willing to drop everything and charge off to the North Pole for 15 months and on short notice too. However, the league came through. Mix was 21 and unmarried at the time and full of youthful exuberance and strength so necessary for such an arduous adventure. He was also a full member of the crew with all the duties and responsibilities which that entailed. The call letters for this station that Mix was to operate were WNP, Wireless North Pole.

The radio equipment for the station was provided by Chicago Radio laboratories. This company was formed by a group of amateurs and headed by R.G.H. Mathews, 92N. The receiver was a Zenith 1R with a detector and two steps of audio amplification all built into a special cabinet. The wavelength range covered, 150 to 850 meters. A long wave tuner was also carried to copy commercial stations. Burgess B batteries were carried to supply the receivers. The transmitter, designed and built by the Zenith boys in record time, was a self rectifying set using two Western Electric "G", 50 watt tubes. Power was supplied by the ships' storage batteries via a 500 cycle alternator driven by a 32 volt DC motor. All of the equipment was supplied by the manufacturers without charge. Appropriate spares were also included. Subsequent advertising showed that manufacturers made good use of the fact that their equipment was with the MacMillan expedition. Space for the station was limited to a 6 foot bench which actually replaced one of the bunks in the sleeping quarters. Though this was a small, low powered station compared to commercial stations in use at the time, it was technically quite advanced., consisting of

a CW transmitter and a regenerative receiver whereas most commercial stations consisted of spark transmitters and crystal detectors. Space for an antenna was also limited by the size of the Bowdoin. Its two masts were 60 feet high but only 23 feet apart. The Zenith boys put together an effective antenna even with the limited space. When on station at Refuge Harbor, the northern most point in the Bowdoin's journey, a number of different full sized antenna arrangements were tried with various degrees of success. The most important factor was found to be the direction in which the antenna was pointing.

WNP, it was decided, would transmit on 185, 220 or 300 meters depending on the conditions and the receiving stations involved. This choice proved to provide some difficulty for two way communication during the voyage. The pace of change in radio technology was so rapid that during the course of the expedition, the value of the short waves for communication over long distances became evident. Attempts were made to get Mix down to 100 meters but either he was unable to modify his equipment or he did not receive the message as no shortwave contacts were made with WNP. The standard operating time, midnight to 2:00 A.M. and 4:00 A.M. to 6:00 A.M., prime operating time for that dedicated group of boiled old owls who listened for Mix night after night.

Communication with WNP was sporatic over the course of the voyage from June 23rd, 1923 when the Bowdoin left Wiscasset, Maine until she returned on September 20th 1924. Of course, there were atmospherics to contend with, long periods of almost total daylight, the Aurora Borealis, but certain stations seemed to be able to get through consistantly to WNP. This was not reflective of their powerful transmitters or superior antennas, but most likely due to their location. A number of stations were contacted while the schooner was underway but only a few were consistent. LANA and Canadian 9BP stand out among a list of many and they were the ones that took the bulk of the traffic and news releases. It is important to appreciate the dedication of this amateur fraternity to sit up night after night or more correctly morning after morning listening for WNP through QRN and QSB, but the amateurs came through. As the expedition wore on, many times weeks would go by with no contact with WNP yet the hams persisted. While on station in the north, Mix listened at odd times for amateur stations and during the course of the expeditions logged hundreds of stations from all U.S. districts and many foreign amateur stations. U.S. and foreign broadcast stations were also heard.

The purpose of the expedition was to gather scientific information. It was MacMillans' objective to study the Flora and Fauna of the northern area and to "gather data on magnetic phenomena". The expedition also provided an opportunity to gather information on radio propagation as well, something in somewhat short supply at that time. The effect of the aurora on radio communication could also be noted. The map shows the expeditions route. The objective was for the Bowdoin to make its way up the coast of Greenland making numerous stops to make magnetic observations. Finally they would arrive in the area of Etah. There at about 79 degrees north latitude, 79 degrees west longitude, they found suitable anchorage and awaited the long winter night when the Bowdoin would be frozen in for 9 months. The ship was used as a base of operations from which numerous journeys were started collecting scientific information. After the summer thaw, the Bowdoin, freed from the ice, returned to Wiscasset, Maine.

It would be superficial to consider the involvement of the American Radio Relay League with the MacMillan expedition as a publicity stunt as it evidenced much more than that. It provided some useful information about radio propagation but in the end, it was a statement about the capabilities of that organization that Maxim had founded a few short years before. It was Maxim recognizing the opportunity to make such a statement through MacMillan and taking advantage of it. It provided insight into Maxim the man, the entrepreneur, prodding the ARRL from a group of radio enthusiasts into a world renown organization, consulted by governments, a guiding light in the technical, political and practical development of radio.

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2) DeSoto, Clinton B., 200 Meters and Down, American Radio Relay League, 1936
3) Schumacher, Alice C., Hiram Percy Maxim, The Ham Radio Publishing Group, 1970
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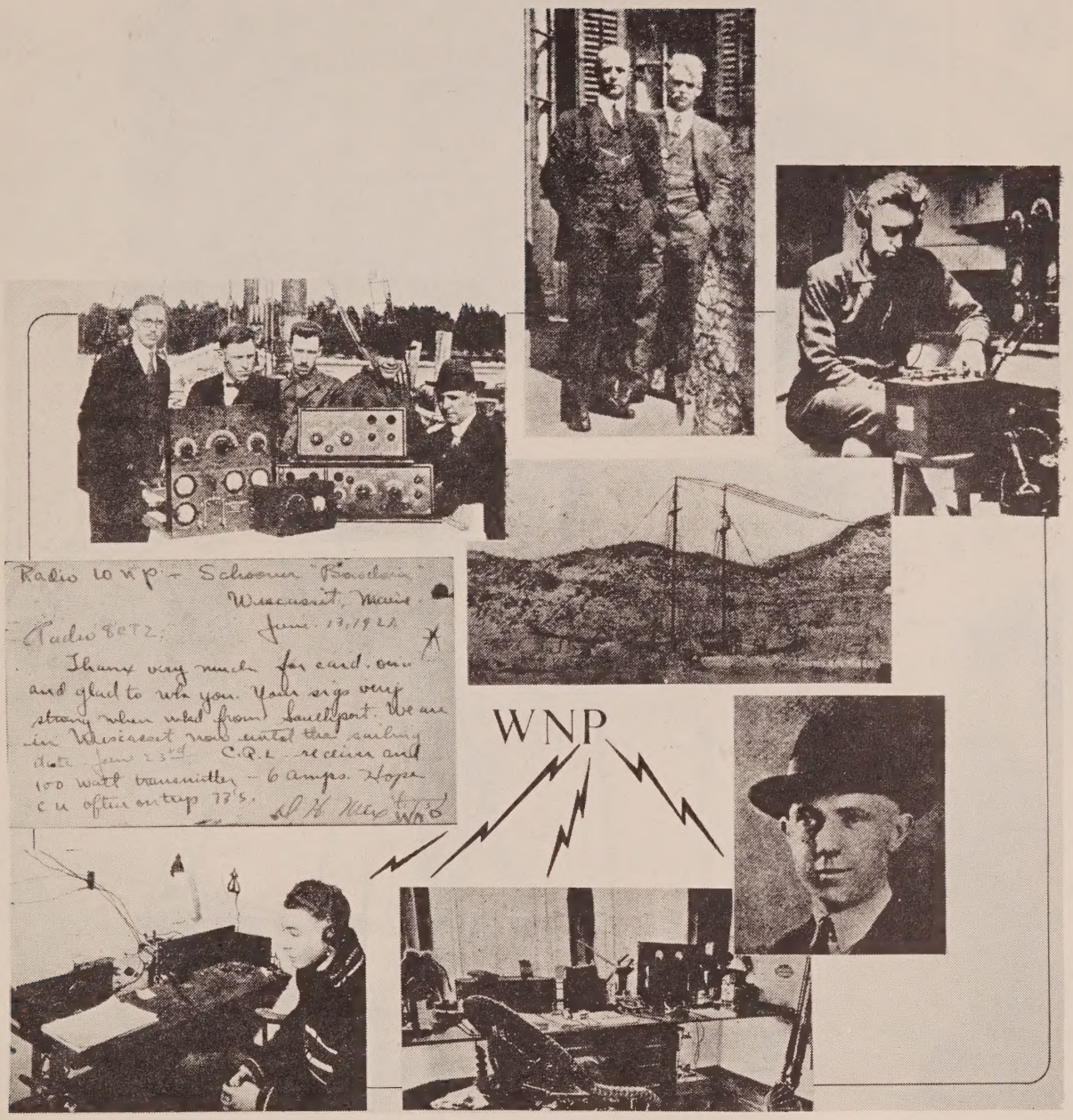
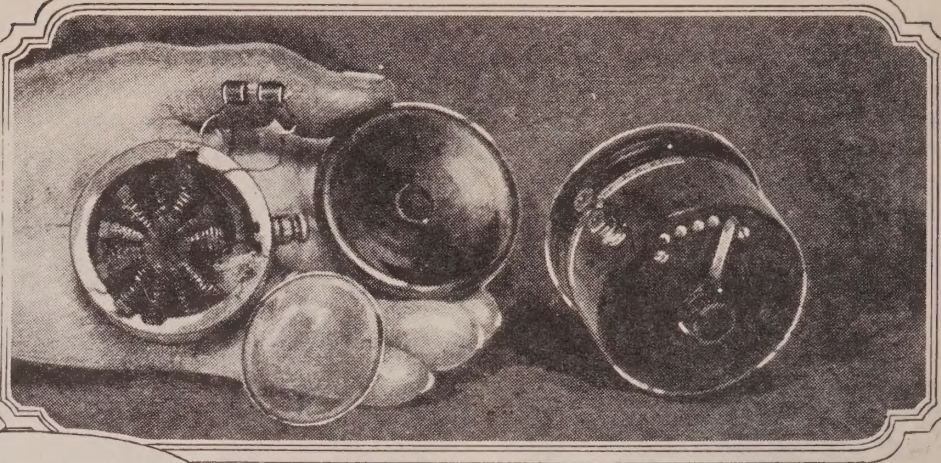


Radio WNP, in the center is the Bowdoin on station at Etah where they wintered over, short of their planned destination, Flagler Bay. Starting at the top and going clockwise, the principals in the undertaking, MacMillan on the left and Maxim on the right. Following is Mix at the controls of WNP. Jack Barnsley, 9BP, Prince Rupert British Columbia and his station, one of the few stations that maintained consistant contact with WNP. Everett Sutton, 7DJ, who broke a long period of silence with WNP using a very modest station- a lone UV202. Sutton was 15 years old at the time. A QSL card from Mix acknowledging contact with 8CTZ at the beginning of the adventure. Finally, some of the players in the expedition, (left to right) Messrs Schnell, Mix and Warner of the ARRL, M.B. West of Zenith who designed the radio equipment and MacMillan along with the equipment used at WNP.



This Radio-Receiving Set Fits in a Telephone Receiver. The Tuning Element Is a Spider-Web Coil with Five Taps; the Builder Is J. A. Key of St. Louis

The "Columbus" Is the First Transatlantic Liner Whose Lifeboats Carry Radio - Transmitting and Receiving Sets of Long Range. The Photo Shows Officers Rigging the Antenna